

WHAT IS CLAIMED IS:

1. A process for preparing D-pantothenic acid comprising
  - a. culturing a *Coryneform* bacteria comprising an attenuated *poxB* gene in a medium suitable for producing D-pantothenic acid; and
  - b. collecting the D-pantothenic acid produced.
2. The process of Claim 1, wherein said *poxB* gene comprises the nucleotide sequence of SEQ ID NO:12.
3. The process of Claim 1, wherein said *poxB* gene comprises
  - 10 SEQ ID NO:6.
4. The process of Claim 1, wherein said *poxB* gene comprises SEQ ID NO:7.
5. The process of Claim 1, wherein said *poxB* gene comprises SEQ ID NO:4.
- 15 6. The process of Claim 1, wherein said D-pantothenic acid is concentrated prior to said collecting.
7. The process of Claim 1, wherein said D-pantothenic acid is concentrated after said collecting.
8. The process of Claim 1, wherein said *poxB* gene comprises
  - 20 a nucleotide sequence which hybridizes under stringent conditions to the nucleotide sequence of SEQ ID NO:1 and which encodes a *PoxB* protein having attenuated *PoxB* activity, wherein said stringent conditions comprise washing in 5X SSC at a temperature from 50 to 68°C.

9. The process of Claim 1, wherein said poxB gene is eliminated in said *Coryneform* bacteria.

10. The process of Claim 1, wherein said Coryneform  
bacteria is *Coryneform glutamicum*.

5 11. The process of Claim 1, wherein said *Coryneform*  
bacterium is selected from the group consisting of  
*Coryneformbacterium acteoglutamicum*, *Coryneformbacterium*  
*acetoacidophilum*, *Coryneformbacterium thermoaminogenes*,  
*Brevibacterium flavum*, *Brevibacterium lactofermentum*,  
10 and *Brevibacterium divaricatum*.

12. The process of Claim 1, wherein said *Coryneform* bacterium further comprises at least one gene whose expression is enhanced, wherein said gene is selected from the group consisting of *panB*, *panC*, and *ilvD*.

13. *Escherichia coli* DSM 13114.

14. A process for producing D-pantothentic acid comprising:

- a. transforming a *Coryneform* bacteria with a vector comprising the polynucleotide sequence of SEQ ID NO:3;
- b. selecting *Coryneform* bacteria that have attenuated *poxB* expression;
- c. culturing said selected *Coryneform* bacteria in a medium suitable producing D-pantothenic acid; and
- d. collecting the D-pantothenic acid produced.

15. The process of Claim 14, wherein said poxB gene

25 comprises a nucleotide sequence which hybridizes under

stringent conditions to the nucleotide sequence of SEQ ID NO:1 and which encodes a PoxB protein having attenuated PoxB activity, wherein said stringent conditions comprise washing in 5X SSC at a temperature from 50 to 68°C.

16. The process of Claim 14, wherein said *Coryneform* bacteria is *Coryneform glutamicum*.

17. The process of Claim 14, wherein said *Coryneform* bacterium is selected from the group consisting of *Coryneformbacterium acteoglutamicum*, *Coryneformbacterium acetoacidophilum*, *Coryneformbacterium thermoaminogenes*, *Brevibacterium flavum*, *Brevibacterium lactofermentum*, and *Brevibacterium divaricatum*.

18. The process of Claim 14, wherein said *Coryneform* bacterium further comprises at least one gene whose expression is enhanced, wherein said gene is selected from the group consisting of *panB*, *panC*, and *ilvD*.

19. A *Coryneform* bacteria comprising an attenuated *poxB* gene.

20. The *Coryneform* bacteria of Claim 19, which is a *Corynebacterium glutamicum*.

21. The *Coryneform* bacteria of Claim 19, wherein said attenuated *poxB* gene comprises the nucleotide sequence of SEQ ID NO:12.

25. 22. A process for producing D-pantothenic acid comprising:

a. transforming a *Coryneform* bacteria with a vector comprising the polynucleotide sequences of SEQ ID NO:6 and SEQ ID NO:7;

5 b. selecting *Coryneform* bacteria that have attenuated poxB expression;

c. culturing said selected *Coryneform* bacteria in a medium suitable producing D-pantothenoic acid; and

d. collecting the D-pantothenic acid produced.

23. The process of Claim 22, wherein said poxB gene comprises a nucleotide sequence which hybridizes under stringent conditions to the nucleotide sequence of SEQ ID NO:1 and which encodes a PoxB protein having attenuated PoxB activity, wherein said stringent conditions comprise washing in 5X SSC at a temperature from 50 to 68°C.

15 24. The process of Claim 22, wherein a sequence comprising SEQ ID NO:1 is deleted in the attenuated poxB gene.

25. The process of Claim 22, wherein said *Coryneform* bacteria is *Coryneform glutamicum*.

20 26. The process of Claim 22, wherein said *Coryneform* bacterium is selected from the group consisting of *Coryneformbacterium acteoglutamicum*, *Coryneformbacterium acetoacidophilum*, *Coryneformbacterium thermoaminogenes*, *Brevibacterium flavum*, *Brevibacterium lactofermentum*, and *Brevibacterium divaricatum*.

27. The process of Claim 22, wherein said *Coryneform* bacterium further comprises at least one gene whose expression is enhanced, wherein said gene is selected from the group consisting of *panB*, *panC*, and *ilvD*.

5 28. An isolated polynucleotide comprising the nucleotide sequence of SEQ ID NO:6.

29. An isolated polynucleotide comprising the nucleotide sequence of SEQ ID NO:7.

10 30. An isolated polynucleotide comprising the nucleotide sequence of SEQ ID NO:12.

RECORDED IN 35 U.S.C. 119(e) FROM THE PAPER COPY SUBMITTED ON 10/10/2003